UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/687,201	10/12/2000	Stanislaw Czaja	LSI-002-PAP-1	9304

24319 7590 03/16/2005

LSI LOGIC CORPORATION
1621 BARBER LANE
MS: D-106
MILPITAS, CA 95035

EXAMINER	
MOORE, IAN N	

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 03/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/687,201	Applicant(s) CZAJA ET AL.	
	Examiner Ian N Moore	Art Unit 2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Claims 1,13,22 and 23 are amended,

2. Claims 1-6,8-26 are rejected by the new and old ground(s) of rejection necessitated by the amendment.

3. Applicant remarks regarding previous provisional obviousness type double patent to be held abeyance is noted.

Claim Objections

4. Claims 1, 13, and 22 are objected to because of the following informalities: Appropriate correction is required.

a) **Claim 1** recites, "**a** revise link" in line 1 and "**a** reverse link" in line 16. For clarity, it is suggested to change "**a** reverse link" in line 16 to "**the** reverse link". Claim 1 recites, "**a** handoff" in line 1 and "**a** handoff" in line 7. For clarity, it is suggested to change "**a** handoff" in line 7 to "**the** handoff".

b) **Claim 13** recites, "**a** revise link" in page 3, line 1 and "**a** reverse link" in page 4, line 4. For clarity, it is suggested to change "**a** reverse link" in page 4, line 4 to "**the** reverse link".

c) **Claim 22** recites, "**a** revise link" in page 4, line 2 and "**a** reverse link" in page 5, line 11. For clarity, it is suggested to change "**a** reverse link" in page 5, line 11 to "**the** reverse link".

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. **Claim 1, 13, 22, and 23** provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1,12, 21 of copending Application No. 09/687,199 in view of Tiedemann (U.S. 5,999,816).

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 13, 22 and 23 of the instant application merely broaden the scope of the claim 1, 12, and 21 of the Patent application (**09/687,199**) by eliminating the elements and their functions of the claims. It has been held that the omission an element and its function is an obvious expedient if the remaining elements perform the same function as before. *In re Karlson*, 136 USPQ 184 (CCPA). In addition, **No. 09/687,199** does not explicitly teach (a) first receiving, at a subject mobile station, a message from the servicing base station, and thereafter. However, this feature is well known in the art. Tiedemann teaches receiving, at a subject mobile station, a message from the servicing base station (see FIG. 5, steps 54-56; see col. 9, lines 35-43; see FIG. 7A, step 1104; see col. 14, lines 40-46;

and reverse link hard handoff (see col. 3, lines 20-24; a mobile assist (i.e. on a reverse link portion) hard handoff). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to receiving, at a subject mobile station, a message from the servicing base station as taught by Tiedemann in the system of Patent application (09/687,199) in order to reduce the probability of dropped calls during system hard handoff; see Tiedemann col. 3, lines 18-24.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 23 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Tiedemann (U.S. 5,999,816).

Regarding Claim 23, Tiedemann discloses a method (see FIG. 5 and 7Aand B, method) of controlling completion of a handoff (see col. 3, lines 20-24; a mobile assist (i.e. on a reverse link portion) hard handoff) between the serving base station (see FIG. 2, originating system base station S1; see col. 5, lines 26-30) and the target base station (see FIG. 2, destination system base station S2 (i.e.B1-B5); see col. 5, lines 32-35) in a CDMA

communication system (see FIG. 1, CDMA System; see col. 5, lines 16-20) having a plurality of base stations in communication (see FIG. 2, originating system base station S1 and destination system base station S2 (i.e.B1-B5); see col. 5, lines 26-35) with at least one mobile station (see FIG. 2, mobile station M1-M3), wherein each base station transmits at least one associated and corresponding pilot channel that uniquely identifies the base station (see col. 5, lines 45-60; pilot signal/channel transmitted by base stations) comprising:

a) first receiving, at a subject mobile station, a message (see FIG. 5, step 56, EDHM, Handoff Direction Message; see FIG. 7A, step 1104) from the servicing base station (see col. 9, lines 39-42; originating system base station) directing performance of a handoff to the target station (see FIG. 5, steps 54-56; see col. 9, lines 35-43; see FIG. 7A, step 1104; see col. 14, lines 40-46; sending EDHM message to mobile station to initiate a hard handoff); and thereafter

b) monitoring a first parameter reflective of a signal (see FIG. 5, step 58,60; MIN_TOT_PWR; or see FIG. 7A, step 1106,1108,1112; Ec/Io or MIN_RX_PWR) received by the subject mobile station from the serving base station (see col. 9, lines 39-42; originating system base station; see col. 5, lines 50-60; see col. 6, lines 23-25, 40-49; see col. 14, lines 20-26, 45-50; note that the minimum power or Ec/Io is the power/signal strength that transmits by the origination base station which is monitored/observed/measured and operated at the mobile station);

c) monitoring a second parameter reflective of a signal (see FIG. 5, Step 58, 60; RECEIVED Ec/Io; or see FIG. 7A, step 1106, 1108,1112; Rx Power or Ec/Io) received by the subject mobile station from the target base station (see FIG. 2, destination system base

station S2 (i.e.B1-B5); see col. 9, lines 40-55; see col. 14, lines 24-64; note that the receive power or Ec/Io, transmits by the destination base station, is monitored/observed/measured by the mobile station);

d) comparing current values of the first parameter to the corresponding values of second parameter (see FIG. 5, step 60; see FIG. 7A, step 1108 and 1112; see col. 9, lines 45-50; see col. 14, lines 50-67; comparing the measured signal strength values of target base station to original base station signal strength threshold in order to determine the signal strength for the hard handoff);

e) returning to step (b) if a current value of the first parameter does not satisfy a selected relationship to a corresponding current value of the second parameter (see FIG. 5, steps 68,66,69,72,70,64 and back to step 56,58; see col. 9, lines 38 to col. 10, lines 10; or see FIG. 7A, step 1108, 1112, 1114 and FIG. 7B, 1122,1128,130,1132 and returns to measuring step 1124; see col. 14, lines 39 to col. 15, lines 60; note that when power of originating base station is not less than or equal to the power of target base station, the method returns to original system instead of successful handoff);

f) initiating a reverse link portion of the handoff (see col. 3, lines 20-24; a mobile assist (i.e. on a reverse link portion) hard handoff) between the serving and target base stations if the current value of the first parameter satisfies to the selected relationship to the corresponding current value of the second parameter (see FIG. 5, step 60 and 62; see col. 9, lines 45-55; see FIG. 7A, steps 1112,1116,1118,1130; see col. 14, lines 55 to col. 15, lines 15; a successful hard handoff),

wherein the reverse link portion of the handoff includes terminating transmission from the mobile station to the serving base station, and subsequently initiating signal transmission from the mobile station to the target base station, and wherein the reverse link portion is distinct from a forward link portion of the handoff (see col. 2, lines 10-20; col. 3, lines 20-24; a mobile assist (i.e. on a reverse link portion) hard handoff where the mobile station breaks/terminates transmission from originating base station, and then makes/initiates transmission to target base station. Hard handoff at reverse link from the mobile station is distinct from a forward link).

Regarding Claim 24, Tiedemann discloses wherein the first (see FIG. 5, step 58,60; MIN_TOT_PWR; or see FIG. 7A, step 1106,1108,1112; pilot signal strength Ec/Io or MIN_RX_PWR) and second parameters reflect pilot signal strengths (see FIG. 5, Step 58, 60; RECEIVED Ec/Io; or see FIG. 7A, step 1106, 1108,1112; Rx Power or pilot signal strength Ec/Io), and the selected relationship is satisfied when the second parameter exceed the first parameter (see FIG. 5, steps 68,66,69,72,70,64 and back to step 56,58; see col. 9, lines 38 to col. 10, lines 10; or see FIG. 7A, step 1108, 1112, 1114 and FIG. 7B, 1122,1128,130,1132 and returns to measuring step 1124; see col. 14, lines 39 to col. 15, lines 60; note that when power of originating base station is not less than or equal to the power of target base station, the method returns to original system instead of successful handoff).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-6, 8-22, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiedemann (U.S. 5,999,816) in view of Ramakrishna (U.S. 6,233,455).

Regarding Claim 1, Tiedemann discloses a method (see FIG. 5 and 7Aand B, method) of initiating a reverse-link portion of a handoff (see col. 3, lines 20-24; a mobile assist (i.e. on a reverse link portion) hard handoff) between the serving base station (see FIG. 2, originating system base station S1; see col. 5, lines 26-30) and the target base station (see FIG. 2, destination system base station S2 (i.e.B1-B5); see col. 5, lines 32-35) in a CDMA communication system (see FIG. 1, CDMA System; see col. 5, lines 16-20) having a plurality of base stations in communication (see FIG. 2, originating system base station S1 and destination system base station S2 (i.e.B1-B5); see col. 5, lines 26-35) with at least one mobile station (see FIG. 2, mobile station M1-M3), wherein each base station transmits at least one associated and corresponding pilot channel that uniquely identifies the base station (see col. 5, lines 45-60; pilot signal/channel transmitted by base stations) comprising the steps of:

a) receiving, at a subject mobile station, a message (see FIG. 5, step 56, EDHM, Handoff Direction Message; see FIG. 7A, step 1104) from the servicing base station (see col. 9, lines 39-42; originating system base station) directing performance of a handoff to the target station (see FIG. 5, steps 54-56; see col. 9, lines 35-43; see FIG. 7A, step 1104; see col. 14, lines 40-46; sending EDHM message to mobile station to initiate a hard handoff);

b) monitoring a first parameter reflective of a signal (see FIG. 5, step 58,60; MIN_TOT_PWR; or see FIG. 7A, step 1106,1108,1112; Ec/Io or MIN_RX_PWR) received by the subject mobile station from the serving base station (see col. 9, lines 39-42; originating system base station; see col. 5, lines 50-60; see col. 6, lines 23-25, 40-49; see col. 14, lines 20-26, 45-50; note that the minimum power or Ec/Io is the power/signal strength that transmits by the origination base station which is monitored/observed/measured and operated at the mobile station);

c) monitoring a second parameter reflective of a signal (see FIG. 5, Step 58, 60; RECEIVED Ec/Io; or see FIG. 7A, step 1106, 1108,1112; Rx Power or Ec/Io) received by the subject mobile station from the target base station (see FIG. 2, destination system base station S2 (i.e.B1-B5); see col. 9, lines 40-55; see col. 14, lines 24-64; note that the receive power or Ec/Io, transmits by the destination base station, is monitored/observed/measured by the mobile station);

d) determining if the first parameter is less than or equal to the second parameter (see FIG. 5, step 60; see FIG. 7A, step 1108 and 1112; see col. 9, lines 45-50; see col. 14, lines 50-67; comparing the measured signal strength values of target base station to original base station signal strength threshold in order to determine the signal strength for the hard handoff);

e) returning to step (b) if the first parameter is not less than or equal to the second parameter (see FIG. 5, steps 68,66,69,72,70,64 and back to step 56,58; see col. 9, lines 38 to col. 10, lines 10; or see FIG. 7A, step 1108, 1112, 1114 and FIG. 7B, 1122,1128,130,1132 and returns to measuring step 1124; see col. 14, lines 39 to col. 15, lines 60; note that when

power of originating base station is not less than or equal to the power of target base station, the method returns to original system instead of successful handoff);

e) initiating a reverse link portion of the directed handoff (see col. 3, lines 20-24; a mobile assist (i.e. on a reverse link portion) hard handoff) between the serving and target base stations parameter is less than or equal to the second parameter (see FIG. 5, step 60 and 62; see col. 9, lines 45-55; see FIG. 7A, steps 1112,1116,1118,1130; see col. 14, lines 55 to col. 15, lines 15; a successful hard handoff),

wherein the reverse link portion of the handoff includes terminating transmission from the subject mobile station to the serving base station, and initiating transmission from the subject mobile station to the target base station (see col. 2, lines 10-20; col. 3, lines 20-24; a mobile assist (i.e. on a reverse link portion) hard handoff where the mobile station breaks/terminates transmission from originating base station, and then makes/initiates transmission to target base station).

Tiedemann does not explicitly disclose d) an offset; and e) initiating and performing the selections and/or adjustments if the first parameter is less than or equal to the sum of the second parameter and the offset.

However, the above-mentioned claimed limitations are taught by Ramakrishna. In particular, Ramakrishna teaches

b) monitoring a first parameter reflective of a signal received by the subject mobile station from the serving base station (see FIG. 1, BS within P1 and P2; see FIG. 2A, step 200, measuring pilot signal strength for active sets P1 and/or P2; see col. 5, lines 6-22; see col. 1, lines 60-67);

c) monitoring a second parameter reflective of a signal received by the subject mobile station from the target base station (see FIG. 2A, step 200, measuring pilot signal strength for new active set P3; see col. 5, lines 6-22);

d) determining if the first parameter is less than or equal to the sum of the second parameter and an offset (see FIG. 3A, step 314, see col. 6, lines 59 to col. 7, lines 6; p1-p3 $\leq$ delta 3, that is, p1 $\leq$ p3 + Delta; note that the difference of signal strength determined by comparing to delta (i.e. determining if P1 is less than equal to the sum of P3 and delta)),

e) initiating/performing a handoff between serving and target base station if the first parameter is less than or equal to the sum of the second parameter and the offset (see FIG. 3B, steps 346 and 348, see col. 7, lines 16-55; note that when the signal strength of P1 is less than or equal to the P3 and the delta, the handoff occurs/initiates between P1 BS and P3 BS by sending Handoff Direction Message (HDM) or BSAO (base station acknowledgement order) message.)

In view of this, having the system of Tiedemann and then given the teaching of Ramakrishna, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Tiedemann, by providing an offset as a variable while determining the candidate base station to perform handoff, as taught by Ramakrishna. The motivation to combine is to obtain the advantages/benefits taught by Ramakrishna since Ramakrishna states at col. 3, line 49-54 that such modification would increase the network efficiency by assisting handoff between a mobile and base-stations while maintaining low dropped call probabilities and without adversely affecting frame error rates.

Regarding claim 2, the combined system of Tiedemann and Ramakrishna discloses all aspects of the claimed invention set forth in the rejection of Claim 1 as described above. Since Tiedemann does not utilize the offset/delta/adjustment value during determining process, it is clear that the value is zero. Ramakrishna further teaches that the offset is arbitrary value set by the system operator (see col. 6, lines 63-65). Thus, the combined system of Tiedemann and Ramakrishna further teaches the offset is zero. In view of this, having the system of Tiedemann, then given the teaching of Ramakrishna, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Tiedemann, by utilizing zero offset value, as taught by Ramakrishna, for the same motivation as stated above in Claim 1.

Regarding claim 3, the combined system of Tiedemann and Ramakrishna discloses all aspects of the claimed invention set forth in the rejection of Claim 1 as described above. Ramakrishna further teaches wherein the offset is based on a Quality of Service (QoS) parameter (see col. 3, lines 27-45, see col. 5, lines 25-28; note that delta value is the quality value set by network operator in order to select the optimal handoff by utilizing the quality path; thus, the delta value is set according to the quality/grade of service for determining the optimal handoff). In view of this, having the system of Tiedemann and Ramakrishna, then given the teaching of Ramakrishna, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Tiedemann, by setting the delta value based on quality/grade, as taught by Ramakrishna, for the same motivation as stated above in Claims 1.

Regarding claim 4, the combined system of Tiedemann and Ramakrishna discloses all aspects of the claimed invention set forth in the rejection of Claim 1 as described above. Ramakrishna further teaches wherein the offset is based on a Frame Error Rate (FER) parameter (see col. 3, lines 27-45, see col. 5, lines 25-28; note that delta value is the quality value set by network operator according to FER in order to select the optimal handoff by utilizing/maintaining the quality path; thus, the delta value is set according to FER for determining the optimal handoff.) In view of this, having the system of Tiedemann, then given the teaching of Ramakrishna, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Tiedemann as taught by Ramakrishna, for the same motivation as stated above in Claims 1.

Regarding claim 5, Tiedemann further teaches wherein the first parameter is a first Ec/Io value associated with serving base station (see col. 9, lines 39-42; originating system base station; see col. 5, lines 50-60; see col. 6, lines 23-25, 40-49; see col. 14, lines 20-26, 45-50; note that the minimum power or Ec/Io is the power/signal strength that transmits by the origination base station which is monitored/observed/measured and operated at the mobile station).

Regarding claim 6, Tiedemann further teaches wherein the second parameter is a second Ec/Io value associated with the target base station (see FIG. 2, destination system base station S2 (i.e.B1-B5); see col. 9, lines 40-55; see col. 14, lines 24-64; note that the receive power or Ec/Io, transmits by the destination base station, is monitored/observed/measured by the mobile station).

Regarding claim 8, Tiedemann further teaches wherein the step (e) of initiating a reverse link intergenerational hard handoff is autonomously performed by the mobile station (see FIG. 5, step 60 and 62; see col. 9, lines 45-55; see FIG. 7A, steps 1112,1116,1118,1130; see col. 14, lines 55 to col. 15, lines 15; see col. 2, lines 1-55; a hard handoff is automatically initiated/performed by the mobile station from the reverse link.)

Regarding claim 9, Tiedemann discloses wherein the reverse link handoff is part of an intergenerational soft handoff comprising a forward link soft handoff and a reverse link hard handoff (see col. 2, lines 1-55; a soft and hard handoffs at forward link and reverse link).

Regarding claim 10, Tiedemann further teaches the reverse link intergenerational hard handoff is autonomously performed by the mobile station (see FIG. 5, step 60 and 62; see col. 9, lines 45-55; see FIG. 7A, steps 1112,1116,1118,1130; see col. 14, lines 55 to col. 15, lines 15; a handoff is automatically initiated/performed by the mobile station from the reverse link.)

Regarding claim 11, Tiedemann discloses wherein the reverse link handoff is part of an intergenerational hard handoff comprising a forward link hard handoff and a reverse link soft handoff (see col. 2, lines 1-55; a soft and hard handoffs at forward link and reverse link).

Regarding claim 12, Tiedemann further teaches the reverse link intergenerational hard handoff is autonomously performed by the mobile station (see FIG. 5, step 60 and 62; see col. 9, lines 45-55; see FIG. 7A, steps 1112,1116,1118,1130; see col. 14, lines 55 to col. 15, lines 15; a handoff is automatically initiated/performed by the mobile station from the reverse link.)

Regarding Claim 13, Tiedemann discloses an apparatus in a subject mobile station (see FIG. 4, mobile station) for initiating a reverse link handoff (see col. 3, lines 20-24; a mobile assist (i.e. on a reverse link portion) hard handoff) between the serving base station (see FIG. 2, originating system base station S1; see col. 5, lines 26-30) and the target base station (see FIG. 2, destination system base station S2 (i.e.B1-B5); see col. 5, lines 32-35) in a CDMA communication system (see FIG. 1, CDMA System; see col. 5, lines 16-20) having a plurality of base stations in communication (see FIG. 2, originating system base station S1 and destination system base station S2 (i.e.B1-B5); see col. 5, lines 26-35), comprising:

a) a pilot signal strength report block (see FIG. 4, pilot energy accumulator 530 or received energy accumulator 540 of mobile station) for sending a pilot signal measurement message (see col. 11, lines 25-35; see col. 10, lines 20-35) to the serving base station (see FIG. 2, originating system base station S1; see col. 5, lines 26-30) when a first parameter (see FIG. 5, Step 58, 60; RECEIVED Ec/Io; or see FIG. 7A, step 1106, 1108,1112; Rx Power or Ec/Io), associated with the target base station (see FIG. 2, destination system base station S2 (i.e.B1-B5); see col. 5, lines 32-35) is greater than a threshold T_Add parameter (see col. 11, lines 25-47; see col. 10, lines 20-35; T_Add); and

b) a reverse link handoff control block (see FIG. 4, a control processor 520) configured to implement a reverse link intergenerational hard handoff (see FIG. 5, step 60 and 62; see col. 9, lines 45-55; see FIG. 7A, steps 1112,1116,1118,1130; see col. 14, lines 55 to col. 15, lines 15; see col. 2, lines 1-55; a mobile assist (i.e. on a reverse link portion) hard handoff) when, after the serving base station transmits an intergenerational handoff direction message to the mobile station (see FIG. 5, step 56, EDHM, Handoff Direction Message to

mobile station; see FIG. 7A, step 1104; see FIG. 5, steps 54-56; see col. 9, lines 35-43; see FIG. 7A, step 1104; see col. 14, lines 40-46), a second parameter (see FIG. 5, step 58,60; MIN_TOT_PWR; or see FIG. 7A, step 1106,1108,1112; Ec/Io or MIN_RX_PWR) associated with the serving base station (see FIG. 2, originating system base station S1; see col. 5, lines 26-30) is less than or equal to the a current value of the first parameter (see FIG. 5, step 60; see FIG. 7A, step 1108 and 1112; see col. 9, lines 45-50; see col. 14, lines 50-67; comparing the measured signal strength values of target base station to original base station signal strength threshold in order to determine the signal strength for the hard handoff);

wherein reverse link intergenerational hard handoff comprise a portion of an intergeneration handoff, distinct from a forward link portion, and includes terminating signal transmissions from the mobile station to the servicing station and subsequently initiating signal transmission from the mobile station to the target base station (see col. 2, lines 1-55; col. 3, lines 20-24; a mobile assist (i.e. on a reverse link portion) hard handoff where the mobile station breaks/terminates transmission from originating base station, and then makes/initiates transmission to target base station. A hard handoff at reverse link from the remote unit is distinct from a forward link).

Tiedemann does not explicitly disclose b) a second parameter is less than or equal to a sum of the first parameter and an offset.

However, the above-mentioned claimed limitations are taught by Ramakrishna. In particular, Ramakrishna teaches means a mobile station sending a pilot strength measurement message (PSMM) to the servicing base station (see FIG. 2A, step 204, mobile triggers a

PSMM) when a first parameter associated with the target base station is greater than a threshold parameter "T_Add" (see FIG. 2A, step 202, P3>T_ADD; see col. 5, lines 6-22);

for initiating a handoff between serving see FIG. 1, BS within P1 and P2) and target base station (see FIG. 2A, step 200, measuring pilot signal strength for new active set P3) wherein the a second parameter (see FIG. 2A and 3A, P1) is less than or equal to a sum of the current value of the first parameter and an offset (see FIG. 2A, step 208; FIG. 3A, step 314, see col. 6, lines 59 to ol. 7, lines 6; p1-p3≤ delta 3, that is, p1 ≤ p3 + Delta; note that difference of signal strength determined by comparing to delta (i.e. determining if P1 is less than equal to the sum of P3 and delta Also, see FIG. 3B, steps 346 and 348, see col. 7, lines 16-55; note that when the signal strength of P1 is less than or equal to the P3 and the delta, the handoff occurs/initiates between P1 BS and P3 BS.)

In view of this, having the system of Tiedemann and then given the teaching of Ramakrishna, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Tiedemann, by providing T_Add and an offset as a variable while determining the candidate base station to perform handoff, as taught by Ramakrishna. The motivation to combine is to obtain the advantages/benefits taught by Ramakrishna since Ramakrishna states at col. 3, line 49-54 that such modification would increase the network efficiency by assisting handoff between a mobile and base-stations while maintaining low dropped call probabilities and without adversely affecting frame error rates.

Regarding Claim 14, the claim, which has substantially disclose all the limitations of the respective claim 5. Therefore, it is subjected to the same rejection.

Regarding Claim 15, the claim, which has substantially disclose all the limitations of the respective claim 6. Therefore, it is subjected to the same rejection.

Regarding Claim 16, the claim, which has substantially disclose all the limitations of the respective claim 2. Therefore, it is subjected to the same rejection.

Regarding Claim 17, the claim, which has substantially disclose all the limitations of the respective claim 8. Therefore, it is subjected to the same rejection.

Regarding Claim 18, the claim, which has substantially disclose all the limitations of the respective claim 9. Therefore, it is subjected to the same rejection.

Regarding Claim 19, the claim, which has substantially disclose all the limitations of the respective claim 10. Therefore, it is subjected to the same rejection.

Regarding Claim 20, the claim, which has substantially disclose all the limitations of the respective claim 11. Therefore, it is subjected to the same rejection.

Regarding Claim 21, the claim, which has substantially disclose all the limitations of the respective claim 12. Therefore, it is subjected to the same rejection.

Regarding Claim 22, Tiedemann discloses a computer program on a computing device (see FIG. 5 and 7A and B, method) wherein the program is capable of directing performance of a reverse link handoff (see col. 3, lines 20-24; a mobile assist (i.e. on a reverse link portion) hard handoff) between a servicing base station (see FIG. 2, originating system base station S1; see col. 5, lines 26-30) and a target base station (see FIG. 2, destination system base station S2 (i.e.B1-B5); see col. 5, lines 32-35) that has been directed by a CDMA communication system (see FIG. 1, CDMA System; see col. 5, lines 16-20) having a plurality of base stations in communication (see FIG. 2, originating system base

station S1 and destination system base station S2 (i.e.B1-B5); see col. 5, lines 26-35) with at least one mobile station (see FIG. 2, mobile station M1-M3), wherein each base station transmits at least one associated and corresponding pilot channel that uniquely identifies the base station (see col. 5, lines 45-60; pilot signal/channel transmitted by base stations) comprising:

a) a first set of instruction for monitoring a first parameter reflective of a signal (see FIG. 5, step 58,60; MIN_TOT_PWR; or see FIG. 7A, step 1106,1108,1112; Ec/Io or MIN_RX_PWR) received by the subject mobile station from the serving base station (see col. 9, lines 39-42; originating system base station; see col. 5, lines 50-60; see col. 6, lines 23-25, 40-49; see col. 14, lines 20-26, 45-50; note that the minimum power or Ec/Io is the power/signal strength that transmits by the origination base station which is monitored/observed/measured and operated at the mobile station);

b) a second set of instruction for monitoring a second parameter reflective of a signal (see FIG. 5, Step 58, 60; RECEIVED Ec/Io; or see FIG. 7A, step 1106, 1108,1112; Rx Power or Ec/Io) received by the subject mobile station from the target base station (see FIG. 2, destination system base station S2 (i.e.B1-B5); see col. 9, lines 40-55; see col. 14, lines 24-64; note that the receive power or Ec/Io, transmits by the destination base station, is monitored/observed/measured by the mobile station);

c) a third set of instruction for determining if the first parameter is less than or equal to the second parameter (see FIG. 5, step 60; see FIG. 7A, step 1108 and 1112; see col. 9, lines 45-50; see col. 14, lines 50-67; comparing the measured signal strength values of target

base station to original base station signal strength threshold in order to determine the signal strength for the hard handoff);

d) a forth set of instruction for initiating a reverse link portion of the directed handoff (see col. 3, lines 20-24; a mobile assist (i.e. on a reverse link portion) hard handoff) between the serving and target base stations parameter is less than or equal to the second parameter (see FIG. 5, step 60 and 62; see col. 9, lines 45-55; see FIG. 7A, steps 1112,1116,1118,1130; see col. 14, lines 55 to col. 15, lines 15; a successful hard handoff);

wherein the reverse link portion of the handoff comprises a reverse link portion of a complete handoff, and wherein the reverse link portion includes terminating signal transmission from the mobile station to the serving base station and subsequently initiating signal transmission from the mobile station to the target base station, and wherein the reverse link portion is distinct from a forward link portion of the complete handoff (see col. 2, lines 10-20; col. 3, lines 20-24; a mobile assist (i.e. on a reverse link portion) hard handoff where the mobile station breaks/terminates transmission from originating base station, and then makes/initiates transmission to target base station. Hard handoff at reverse link from the mobile station is distinct from a forward link).

Tiedemann does not explicitly disclose c) an offset; and d) initiating and performing the selections and/or adjustments if the first parameter is less than or equal to the sum of the second parameter and the offset.

However, the above-mentioned claimed limitations are taught by Ramakrishna. In particular, Ramakrishna teaches

a) monitoring a first parameter reflected of a signal received by the subject mobile station from the serving base station (see FIG. 1, BS within P1 and P2; see FIG. 2A, step 200, measuring pilot signal strength for active sets P1 and/or P2; see col. 5, lines 6-22; see col. 1, lines 60-67);

b) monitoring a second parameter reflected of a signal received by the subject mobile station from the target base station (see FIG. 2A, step 200, measuring pilot signal strength for new active set P3; see col. 5, lines 6-22);

c) determining if the first parameter is less than or equal to the sum of the second parameter and an offset (see FIG. 3A, step 314, see col. 6, lines 59 to col. 7, lines 6; p1-p3 $\leq$ delta 3, that is, p1 $\leq$ p3 + Delta; note that the difference of signal strength determined by comparing to delta (i.e. determining if P1 is less than equal to the sum of P3 and delta)),

d) initiating/performing a handoff between serving and target base station if the first parameter is less than or equal to the sum of the second parameter and the offset (see FIG. 3B, steps 346 and 348, see col. 7, lines 16-55; note that when the signal strength of P1 is less than or equal to the P3 and the delta, the handoff occurs/initiates between P1 BS and P3 BS by sending Handoff Direction Message (HDM) or BSAO (base station acknowledgement order) message.)

In view of this, having the system of Tiedemann and then given the teaching of Ramakrishna, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Tiedemann, by providing an offset as a variable while determining the candidate base station to perform handoff, as taught by Ramakrishna. The motivation to combine is to obtain the advantages/benefits taught by

Ramakrishna since Ramakrishna states at col. 3, line 49-54 that such modification would increase the network efficiency by assisting handoff between a mobile and base-stations while maintaining low dropped call probabilities and without adversely affecting frame error rates.

Regarding Claim 25, Tiedemann discloses wherein the first and second parameters reflect pilot signal strengths, and the selected relationship is satisfied when the second parameter exceed the first parameter as disclosed above in claim 24. Tiedemann does not explicitly disclose an offset. However, the above-mentioned claimed limitations are taught by Ramakrishna. In particular, Ramakrishna teaches c) determining if the first parameter is less than or equal to the sum of the second parameter and an offset (see FIG. 3A, step 314, see col. 6, lines 59 to col. 7, lines 6; p1-p3 $\leq$ delta 3, that is, p1 $\leq$ p3 + Delta; note that the difference of signal strength determined by comparing to delta (i.e. determining if P1 is less than equal to the sum of P3 and delta)). In view of this, having the system of Tiedemann and then given the teaching of Ramakrishna, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Tiedemann, by providing an offset as a variable while determining the candidate base station to perform handoff, as taught by Ramakrishna. The motivation to combine is to obtain the advantages/benefits taught by Ramakrishna since Ramakrishna states at col. 3, line 49-54 that such modification would increase the network efficiency by assisting handoff between a mobile and base-stations while maintaining low dropped call probabilities and without adversely affecting frame error rates.

Regarding claim 26, Tiedemann discloses the detecting pilot signal strength between the serving and target base station as described above in claim 23. Ramakrishna'455 further discloses wherein the offset is based on different in symbol detection efficiency (see col. 1, lines 50-67). Note that the combined system of Tiedemann and Ramakrishna'455 discloses a CDMA system and measuring pilot signal strength. Note the CDMA system utilizes pilot symbols in transmission. Thus, it is clear that when detecting and measuring pilot signal strength or power, it is detecting or measuring the pilot symbol detecting efficiency since at lower power, pilot symbol cannot be detected. Thus, it is also the clear that the offset is the difference between pilot signal strengths.

Allowable Subject Matter

11. **Claim 7** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N Moore whose telephone number is 571-272-3085. The examiner can normally be reached on M-F: 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

2-18-2005

BOB PHUNKULH
PRIMARY EXAMINER